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ABSTRACT

Reflecting worldwide concern over the spread of the AIDS epidemic, the Sexuality and Family Planning Unit of the World Health Organization's Regional Office for Europe brought advisors from seven European countries and the United States together to engage in a discussion of AIDS and the newborn, and that consultation forms the basis of this report. Topics addressed include: (1) the magnitude of the pediatric AIDS problem in Europe and in the United States; (2) diagnosis and surveillance of AIDS and HIV infection; (3) modes of transmission; (4) risk of transmission from mother to child; (5) screening for HIV infection; (6) termination of pregnancy; (7) counseling and education of pregnant women found to be HIV positive; (8) milk banks; (9) immunization; (10) follow-up HIV positive mothers; (11) treatment; and (12) fostering and adoption. Thirty-one references, 6 tables, and a list of participants in the consultation conclude the report. (SKC)

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AIDS AND THE NEWBORN

Report on a WHO consultation

Copenhagen
9-10 April 1987

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The mode of transmission in groups at high risk for HIV infection are similar to those of hepatitis B. However, horizontal transmission, absent in HIV infection, has been reported with hepatitis B. Current guidelines aimed at the control and management of hepatitis B in schools, day-care centres and among community workers and family contacts should be more than adequate to deal with the presence of HIV seropositive individuals in the population. Transmission of infection seems to require intimate sexual contact or the injection of infected blood products. Studies of family members of patients with AIDS have shown no transmission of infection except for sexual partners and children born to HIV positive mothers[26-29]. None of the family members of over 17 000 AIDS cases reported to CDC are known to have developed AIDS[30]. Evidence against casual spread of virus is mounting[16] and there are no reports of transmission of HIV in day-care or foster-care settings or schools[24,31].

15. Conclusions and recommendations

1. Throughout the meeting the need for health education about AIDS was emphasized. This is needed both for management of infection and its prevention. It should be aimed not just at HIV positive women and those at high risk of infection but also towards the health professions (doctors, nurses, health workers, midwives, family planners, social workers, etc.) and the public at large. It must include information about the mode of transmission of HIV infection and methods of prevention including advice on safe sex and the use of condoms. In the absence of any effective treatment, health education must be given high priority. The media should be encouraged to help disseminate information about the disease and encourage people to be aware of the possible consequences of their lifestyle.

2. There is a need for improved surveillance of AIDS in children. Additional information on the prevalence of HIV infection in both women and children in different countries is highly desirable as this reflects the current situation. It is important to monitor trends over time and changes in risk factors which may suggest an increase in heterosexual transmission and therefore intrauterine or perinatal infection.

3. The case-definition of AIDS in children was discussed at some length and it was agreed that there was a need to establish a clear definition for the European region, possibly based on the new CDC definition[3].

4. There has been continued controversy over the question of serological screening of populations for HIV antibody. In the absence of any effective treatment, the group considered it important to identify women of childbearing age who could be at risk of infection. Ideally, this should be done before pregnancy so that if a woman is seronegative the risks of infection can be stressed and advice given about safe sex and contraception. There was general agreement that there should be selective voluntary testing of women in the antenatal period. It is important to identify those women likely to be at highest risk of HIV infection so that if they are positive they can be given counselling, advice about the risk of fetal infection and be offered termination. Although comprehensive antenatal screening of all women would provide useful epidemiological information about risk of HIV infection, it was

TARGET 4

Reducing disease and disability

By the year 2000, the average number of years that people live free from major disease and disability should be increased by at least 10%.

Index:

ACQUIRED IMMUNODEFICIENCY SYNDROME
INFANT, NEWBORN

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1. Introduction

The consultation was convened by the Sexuality and Family Planning Unit of the World Health Organization's Regional Office for Europe. Advisors from seven European countries and the USA were invited to evaluate the magnitude of the problem of AIDS and the newborn and to formulate conclusions and recommendations together with WHO Headquarters and EURO staff. This report reflects the situation at the time of the consultation and it is appreciated that this is likely to change over a short period of time as further information becomes available.

The aids epidemic is spreading worldwide and affecting individuals of all continents. According to different epidemiological models, the human race is facing unprecedented danger caused by lentiviruses which have never before affected people on such a scale. Within a period of five years it is estimated that there may be up to 100 million people affected with HIV-viruses if no action is taken. A substantial proportion of these will be women. As AIDS can be transmitted from an infected mother to her unborn child it is important to review the situation and to prepare recommendations for women on how to control the disease through primary prevention.

In his welcoming speech, Dr P.O. Petersson stressed the importance of the problem and the lack of information currently available about AIDS and the newborn. For example, little is known about the number of newborns infected although experience to date suggests that about 50% of children born to HIV infected mothers are likely to be infected and to suffer from AIDS at a later date. More information is required about the prognosis of HIV infection in children.

Dr Ilona Kickbusch, Acting Director, Lifestyles and Health, stressed the importance of the social and psychological effects of risk and the newborn. She concluded by saying that risk and the newborn is also about couples and fathers and that health education aspects as well as aspects of contraception, pregnancy and birth should always take this responsibility into account.

Ms Wadad Haddad, Regional Officer for Sexuality and Family Planning, in her opening address expressed her concern about HIV antibody-positive children and those with AIDS. She stressed the need to exchange views and to clarify the extent of the problem, the modes of transmission of infection, and the risk of infection in a child born to an HIV-seropositive mother. She also emphasized the importance of encouraging measures aimed to restrict reproduction in seropositive women of childbearing age.

2. The Magnitude of the problem

2.1 Paediatric AIDS in Europe

The AIDS epidemic in Europe closely follows the pattern of the epidemic as it first evolved in the United States. By 30 June 1987 a total of 6 882 cases of AIDS had been reported to the WHO Collaborating Centre in the European Region. The largest number of cases were reported from France, the

Federal Republic of Germany, Italy, the United Kingdom and Spain, but the highest estimated prevalence rates per million population were noted in Switzerland, France and Denmark. 91 per cent of the adults reported were of European origin, 1 per cent Caribbean and 4 per cent of African origin with most of the remaining 3 per cent originating from the American continents[1].

Among the 6 121 cases in adult Europeans, 64 per cent were homosexual or bisexual males, 18 per cent heterosexual drug-abusers, 3 per cent drug-abusers and either homosexual or bisexual, 4 per cent haemophiliacs, 3 per cent recipients of blood transfusion; 5 per cent were heterosexual and for the remaining 2 per cent no information was obtained. In contrast, the majority of AIDS cases of African and Caribbean origin were heterosexual cases with no known risk factors.

182 (105 boys and 77 girls) of the 6 882 notified cases (3%) were children under 15 years of age. The largest number of children were reported from France, Italy and Spain. Table 1 shows these children in risk group categories. Eighty-five had a mother with AIDS or at increased risk of AIDS. The majority of these mothers were intravenous drug abusers or infected by heterosexual contact. 53 (31%) of the 182 children were infected by transfusion of blood or blood products (haemophiliacs and transfusion recipients). Italy and Spain had the largest number of IV drug abuser mothers whereas sexual contact was more common in France.

Table 2 shows paediatric AIDS notifications by country of diagnosis. The largest number were from France and Italy. A significant number of the French cases were children of African origin.

Table 3 shows the number of AIDS cases in adult females (9% of total adult cases). As the number of cases in women of childbearing age increases, this is likely to be reflected by an increase in paediatric notifications.

Although the two groups most at risk for AIDS are homosexual or bisexual men and intravenous drug-abusers, the extent to which these two groups contribute to the total number of AIDS cases differs within the European region. For example, AIDS is more often seen in drug-abusers in the Mediterranean countries and among homosexual men in the Northern countries. Therefore, AIDS in children acquired by vertical transmission would be expected to occur more often in Mediterranean countries. In Europe as a whole, the percentage of heterosexual intravenous drug-abusers with AIDS has shown a marked increase, particularly in Italy and Spain where it accounts for 57% and 53% of the total number of adult AIDS cases respectively. Together these two countries accounted for 69% of the total cases in this risk group.

Since the number of HIV antibody-positive haemophiliacs and blood transfusion recipients is unlikely to increase as factor VIII is heat-treated and blood donors are screened, the major source of HIV infection in children will be vertical transmission from mother to infant. This number is likely to increase substantially over the next three to four years.

2.2 Paediatric AIDS in the USA

There has been a marked increase in the number of children with AIDS reported to the Centres for Disease Control (CDC) since 1985 and this has paralleled an increase in the number of female AIDS cases (Table 4).

By 23 March 1987 462 children under 13 years of age were reported to CDC. 368 (80%) were born to high risk mothers, 24 (5%) were haemophiliacs, 57 (12%) had received blood transfusions before becoming ill and for 13 (3%) no risk factor had been identified (Table 5). Of the 80% where perinatal transmission was implicated (Table 6), the most frequent risk factor was intravenous drug abuse. Of those identified since June 1981, 291 (63%) are known to have died. The rate of reporting of AIDS in children has increased, with 201 (44%) notifications occurring in the year ending March 1987 compared with 151 (33%) in the previous year (CDC provisional data 1987).

Seven per cent of all AIDS cases are in women and 1.7% in children but it is expected that this proportion will increase as infection among heterosexuals increases as a result of HIV-infection in intravenous drug-abusers and prostitutes.

3. Surveillance

The first element of prevention and control is to have good surveillance. Without this, the progression of the disease in the community cannot be established and the effect of control measures assessed.

3.1 AIDS

Comprehensive surveillance of AIDS in children and women of childbearing age is important. The current AIDS Surveillance Scheme in Europe provides valuable information and enables time trends and changing risk factors to be examined. However, the number of cases of AIDS represents only the tip of the iceberg and does not reflect the currtent situation. For every case of AIDS there will be many HIV-positive women and children and the current reporting of AIDS reflects the HIV situation five or more years ago.

Paediatric cases of AIDS are likely to be under-reported, partly because of the present difficulty in defining a case. This was emphasized by paediatricians in the group who were aware of more cases of AIDS in children than had been reported to the WHO Collaborating Centre in Paris. The surveillance of AIDS in children needs to be improved with more complete reporting.

The problem of AIDS in children is growing but it is not possible to make estimates for the future, as this depends on changes in risk factors associated with transmission of infection.

The situation, especially regarding the relative impact of intravenous drug abuse, is different in each country and it is not, therefore, possible to extrapolate across the region or even from one part of a country to another. For example, in England and Wales 5-10% of intravenous drug-abusers are HIV antibody-positive compared with 50-60% in Scotland.

3.2 Definition of AIDS

For surveillance purposes a relatively precise case definition is required. WHO has adopted the case definition of AIDS in adults and children developed by the Centres for Disease Control[2].

A reliable estimate of the number of children reported with AIDS depends on a clear definition. Classification systems have been developed primarily to categorize clinical presentations in adult patients and are not therefore entirely applicable to infants and children. Paediatricians caring for HIV infected children report that only about 50% of those with symptomatic illness related to the infection fulfill the criteria for the present CDC surveillance definition of AIDS.

The proposed revised CDC definition[3] takes this into account but is too complex for routine surveillance. It would seem timely that further consideration be given to the definition of AIDS in children for the European region.

3.3 Surveillance of HIV infection

Reliable data on the prevalence of HIV infection in Europe are not routinely available and the acquisition of such data should be treated as a matter of urgency.

Although it would not be feasible to recommend a central surveillance scheme for HIV infection similar to that for AIDS, it was considered important for each country to obtain, as far as possible, information (within .....) on the prevalence of HIV infection in adults and children. Changes in prevalence could then be monitored and appropriate action taken. Each country should record centrally all information currently being gathered on HIV prevalence. This may be derived from serological surveys, antenatal testing, or studies investigating sero-prevalence in subgroups at increased risk such as individuals attending clinics for sexually transmitted diseases, drug-abusers or prostitutes. Such information should be coordinated for Europe as a whole so that changes within the region can be identified. HIV prevalence is a much more sensitive indictor of the current situation than notifications of AIDS and enables changes in risk groups to be detected earlier so that further predictions about heterosexual transmission and paediatric AIDS can be made with more reliability.

4. Diagnosis of HIV infection

It is still not known at what age a reliable diagnosis of HIV infection can be made on serological grounds alone since the presence of antibody may reflect maternal IgG. Maternal antibody may be lost at any time after four months, but may persist for up to 15 months. Several different types of IgM tests have been developed and are being evaluated, but information to date suggests that their sensitivity and specificity are too low for routine use.

A definitive diagnosis of HIV infection in young infants must be based on the identification of HIV in blood or other tissues. In a carefully operated laboratory that performs quality-control checks to detect cross-contamination of cultures, the specificity of viral culture as a diagnostic tool is high; the low sensitivity, however, and the cost and difficulty make this a procedure that will remain limited to large centres. Antigen tests have been developed but their sensitivity when used for diagnosis of infection in infants of different ages still requires careful evaluation. The tests will probably be of limited use in infants with circulating antibody. DNA probes to detect integrated provirus with signal amplification techniques may be

the most promising diagnostic technique, but it is still in the early stages of development and has not been tested sufficiently on specimens from infants at different ages.

In older children the persistence of HIV antibody after 15 months of age is indicative of infection.

There have, however, been reports of virus isolation from asymptomatic HIV antibody negative infants[20]. This highlights the need for caution in interpreting the presence or absence of antibody in a child without either virus isolation or positive antigen test. Similarly the low sensitivity of culture systems means that a negative virus culture does not necessarily exclude infection.

New tests being developed will need to be carefully validated before they are introduced widely.

5. Modes of transmission from mother to infant

The possible routes for virus transmission from mother to infant are: transplacental, intrapartum or postnatally via breast milk or close mother-child contact.

5.1 Intrauterine transmission

Most infections in children are acquired vertically from their mother (Table 4). There is now clear evidence for intrauterine transmission. HIV antigen was detected in amniotic and fetal tissues from a pregnancy termination at 15 weeks in a woman with AIDS[5]. Lapointe et al reported an infant born by Caesarean at 28 weeks gestation to a mother with terminal AIDS from whom virus antigen was found in the thymus. The infant died at 20 days without having had contact with the mother after birth[6]. In another case[7], the pregnancy of an HIV antibody-positive heroin addict was terminated at 20 weeks and although the membranes were intact, fetal samples were found to contain HIV.

Further evidence for intrauterine transmission is also suggested by the recently described dysmorphic syndrome in children with symptomatic HIV infection[8] which is presumably related to viraemia in early fetal life. There was some discussion about whether this sydrome did exist; none of 15 infants with AIDS or 60 HIV positive newborns identified in Spain had dysmorphic features. Sheikh et al in New York also failed to confirm fetal AIDS syndrome. (Paediatric notes, 1987, II, 18).

5.2 Intrapartum transmission

HIV has been isolated from female genital secretions[9,10] suggesting that these could be a potential route for the transmission of infection. Although Chiodo et al[11] suggested that this could be an important source of infection, the data are far from conclusive and there is insufficient evidence to advocate a policy for elective Caesarean section on the grounds of HIV infection. Caesarean section carries some maternal hazard and this procedure could be prejudicial to the health of an HIV carrier.

5.3 Breast milk

HIV has been isolated from the non-cellular fraction of breast milk[12] and there is also presumptive evidence that on one occasion HIV infection may have been transmitted in breast milk[13]. This is based on a child breast-fed for six weeks who appears to have acquired HIV infection after delivery. His mother presumably seroconverted after receiving a blood transfusion following delivery but it was not until 13 months later, when the blood donor was found to have AIDS, that the mother and child were tested. Breast milk seemed the most likely source of infection in the infant but other close contact with the mother could not be excluded.

Where artificial feeding is safe it is preferred for HIV seropositive women but any recommendations concerning breast feeding need to be carefully weighed against other neonatal hazards that may be introduced by abandonment of breast feeding in an environment where bottle feeding may not be easily and safely achieved.

5.4 Semen

Virus has been isolated from semen and this is an important route of transmission of infection. Four of eight recipients of semen from an asymptomatic HIV positive donor were found to be seropositive when investigated three years later[14]. The relative risk of virus spread through vaginal intercourse is not known and information about transmission from females to males is poorly documented. There seems to be a variability in the infection rate, possibly due to biological variability in the virus or the host.

5.5 Saliva

Virus has been isolated from saliva but the isolation rate is very low. Ho et al isolated virus from only one of 83 saliva samples from HIV positive individuals whereas virus was detected in 28 of 50 blood samples tested from the same population[15]. The low isolation rate is likely to account for the failure of the virus to spread in the family environment[16]. There is no evidence to date that the infection is spread by kissing or oral intercourse.

5.6 Blood or blood products

Transfusion of infected blood or blood products is an important mode of transmission as emphasized by the number of seropositive haemophiliacs and recipients of blood transfusion. Neonates have acquired infection following transfusion. Amman et al[17] described a year old infant with AIDS, presumably infected following multiple transfusions for rhesus incompatibility in the first two weeks of life. The donor died of AIDS 17 months later and there were no other sources of infection. In the Netherlands, a single donation from a healthy homosexual, subsequently found to be HIV positive, was administered to nine neonates[18]. All nine infants became infected; two have died of AIDS and three have ARC.

In areas such as Europe where all units of donated blood and plasma are screened for HIV antibody, and blood products such as clotting factor concentrates are heat-treated during manufacture, new infections from this source should be virtually eliminated.

5.7 Urine and faeces

Although virus has been isolated from these sources, cumulative epidemiological evidence suggests that given even minimal hygienic practices, transmission from these sources does not occur.

5.8 Mother-child contact

Although the concept of transmitting infection by close mother-child contact is often named, there are no cases that implicate or prove this mode of infection. It is difficult, however, to establish satisfactory proof to eliminate this potential route.

6. Risk of transmission from mother to infant

The exact risk of transmission of infection from an infected mother to her infant is unknown as no large prospective studies have yet been carried out in which infants born to women who are known to be infected are followed from birth. A study of 12 children born to women who had previously given birth to a child with AIDS suggested a risk of about 50%[4]. Four children developed AIDS or AIDS-related complex, two had abnormal immunological function and five were immunologically normal at 5 - 22 months of age. Numbers are small with wide confidence intervals and the results cannot be extrapolated since the mothers were selected on the basis of already having an infected child. Also, several of the mothers were symptomatic before the birth of the child and it is likely that this affects the probability of viral transmission. In another study three HIV infected women without symptoms gave birth to infants who were well and antibody negative at one year[14]. Semprini et al[19] reported 24 infants born to HIV seropositive women in Milan and followed from birth. At six months, 12 were seropositive and 12 seronegative. This estimate of a 50% transmission rate is further supported by papers presented at the Third International Conference on AIDS, Washington, D.C., 1-5 June 1987. The EEC Collaborative multicentre study on infants born to mothers with HIV infection has recruited over 100 newborns and should be able, with sufficient follow-up time, to provide a further estimate of risk[20].

7. Screening for HIV infection

There are different approaches to screening and testing in the European countries. Ideally women should be tested before embarking on pregnancy but this is rarely practical and does not imply that subsequent infection will not occur. An alternative is to offer women HIV testing as part of the antenatal serological screening together with syphilis, rubella and hepatitis B[2]. The value of antenatal screening is twofold. For epidemiological purposes it provides information on the prevalence of HIV infection in women of childbearing age. It also identifies women who are HIV seropositive so that they may be offered a termination of pregnancy and counselled about the consequence of being infected. This poses problems in countries where termination of pregnancy is not possible, and education and counselling is all that can be offered.

In a few centres antenatal screening is offered to all pregnant women and in others only to those at high risk of being infected: intravenous drug-abusers, prostitutes, women from countries with high prevalence of HIV or women whose sexual partners are in high-risk groups. However, in most European countries HIV testing in pregnancy is not routinely available but has been carried out only in selected centres, mainly to obtain information about the spread of infection into the heterosexual population.

In Berlin, pregnant women attending one maternity hospital were offered antenatal HIV testing with a 98% acceptance rate. Nine of 1 800 women were HIV seropositive, seven of whom were from high risk groups. Voluntary screening was then extended to other antenatal clinics in Berlin with different results. This emphasizes the difficulty in extrapolating from one centre or population to another.

In Rome HIV screening is offered currently to all pregnant women from high risk groups: it is anticipated that this will be extended naturally to include all pregnant women.

In Paris voluntary HIV testing of pregnant women is being done in several centres. Acceptance rates vary according to the motivation of doctors.

In the USA there is now pressure to offer HIV testing to all pregnant women. In New York it has been estimated that there are about 10 000 seropositive women, many of whom will develop AIDS over the next few years.

The group considered that antibody testing should be voluntary and not mandatory and that some form of voluntary testing of pregnant women is desirable provided that adequate provision for competent counselling was available together with social service support. Medical and nursing midwifery personnel need to be adequately informed about the consequences and implications of an HIV positive test and would require further education. It was emphasized that screening should be considered primarily for the benefit of the mother and child and not to protect the staff from infection. Without adequate facilities for testing and good counselling services it would not be wise to embark on antenatal population screening.

If 100 000 women were screened and good laboratory facilities were available, about one per cent would be found to be initially reactive on the ELISA test if the prevalence was in fact zero. The test would need to be repeated on approximately 1 000 blood samples and approximately 250 of these (0.25% of the original samples) would be repeatedly reactive. A western Blot would need to be carried out on these repeatedly positive samples to reach a final diagnosis of HIV infection. These estimates are based on currently available tests, and test performance may be improved in the future. (Allen, personal communication). In a population of this size there could be as many as 2-3 false positives, depending on the Western Blot procedure, the laboratory, and the criteria used for interpretation. Western Blot kits, however, are not yet routinely available.

The increasing prevalence of HIV infection in Europe makes diagnosis more complicated. ELISA tests may be falsely reactive because of non-specific reactions or cross-reactive antibody; in these instances, the Western Blot test should be negative.

Prevention of paediatric AIDS is dependent on prevention of infection in the mother. HIV positive women should be detected before pregnancy or in early pregnancy. All women with high risk factors should be offered an HIV antibody test before becoming pregnant and/or when pregnant. Depending on the prevalence of HIV infection in a country, the availability of laboratory facilities and cost-benefit analysis, the test may be considered for all pregnant women. As the implications of a positive test are considerable, antenatal testing without good counselling is not recommended.

8. *Termination of pregnancy*

In countries where pregnancy termination is acceptable, it should be offered in early pregnancy to all women known to be antibody positive. The justification for this is to prevent the birth of an HIV infected infant, the consequences of which are serious.

The view that pregnancy itself can accelerate HIV disease is still unsubstantiated and based on a series of case reports of severe infections in pregnancy or the development of AIDS during pregnancy in previously asymptomatic women who have already had a child with AIDS[4]. This issue needs further research and requires follow-up of both pregnant and non-pregnant HIV positive women from similar risk groups.

9. *Counselling and education of pregnant women found to be HIV positive*

Given that HIV infection is a disease for which, at present, there is no cure, control and support must be through counselling and health education.

All women found to be HIV positive and their partners must be offered good counselling and educational advice on a personal and confidential basis. This must include information about the implication of the infection for the pregnancy and the newborn infant as well as personal responsibility for the care of the body, sexuality in its widest sense, information about transmission of venereal disease and their prevention by the use of condoms.

Reasonable assurance must be given that confidentiality will be maintained. Confidentiality must be ensured to minimize the risk that HIV infected women will be subject to discrimination.

Women with high risk factors but with a negative HIV test would also benefit from counselling which must include advice on safer sexual practice during pregnancy. They require continuing support in changing their lifestyle or altering behaviour to minimize or avoid the risk of future infection.

10. *Milk banks*

Unplanned donation is not advisable and milk banks organized on this basis should be discontinued. Planned donation after appropriate donor screening may be acceptable. No donation should be accepted from an individual in a designated high risk group and consideration should be given to testing low risk individuals before donating breast milk.

In a recent study Eglin and Wilkinson[21] concluded that pasteurisation may achieve inactivation of the virus in breast milk using a temperature of 56° for 30 minutes. Studies on freeze storage of breast milk for donation are required and until more information is available, a cautious approach is indicated.

11. Immunization

In a review of the medical records of 213 children with symptoms of HIV infection, 171 had received live oral polio vaccine and 63 measles, mumps and rubella vaccine with no adverse effects. At least 38 of these infants had been vaccinated after the onset of HIV symptoms. The potential benefit of protecting HIV infected children from natural disease before their immune system is compromised led the World Health Organization and the Immunization Practices Advisory Committee of the US Public Health Service to recommend that diphtheria, tetanus, pertussis (DPT) and live oral polio and measles vaccines be given to HIV infected children without symptoms[22,23]. In view of the theoretical concerns about the competence of their immune system, live vaccines (oral polio, measles and BCG) are contraindicated for children with HIV symptoms. Children living in a household with persons with AIDS should also be given inactivated polio vaccine instead of oral polio vaccine in view of the risk of secondary transmission.

12. Follow-up of HIV positive mothers and their infants

Management of the newborn infant of an HIV positive mother should be as for any other newborn and where possible they should be kept in the same room as the mother. The majority of infants do not present with symptoms relating to their infection but may have other problems relating to maternal risk factors such as drug-abuse. These problems, which include premature delivery, low birth weight and drug withdrawal symptoms, may require special care facilities.

Breast feeding should not be recommended in European countries because of the possible transmission of infection via breast milk (see section 5.3).

Evidence of HIV infection in neonates and infants is rarely obtained from a single examination or by using a single method but usually requires regular clinical, immunological and virological examination over the first years. The neonate should be tested for HIV antibody, for the presence of virus by culture if this is available and a satisfactory specimen can be obtained (some laboratories will require too large a blood sample for a small baby), and for immune function. He or she should be clinically evaluated for signs of HIV infection.

Regular follow-up examinations will be required during the first years of life to establish definitely whether or not the infant is infected with HIV. If the child is infected he or she will require continued care. The follow-up examination should include a clinical evaluation to detect early signs of HIV infection, an assessment of immune function and evaluation of HIV status. The child's status should be evaluated as appropriate, depending on availability of tests and the reliability of currently available procedures (see section 7). A proven B-cell defect in the presence of recurrent bacterial infections provides the rational for sytem therapy with intravenous immunoglobulin.

A team approach to follow-up is essential and will obviously depend on resources available. Many mothers will require home visiting by experienced nurses or social workers and it is important that a named paediatrician is given overall responsibility for the infant's follow-up and care. Both the mother and her partner will require continued support and counselling about lifestyles, safe sexual practices and the risk to a further pregnancy. They will also need education about the infection and its implications for their child and themselves.

There is a need for continued training of counsellors to provide psycho-social support for these women and their families in the community. They face major problems relating to risk factors such as drug-abuse, in addition to HIV infection.

Again, the need to educate health professionals and the public about HIV infection, the routes by which it is acquired and how it can be prevented is essential and must be carried out on a continuing basis if these families are to be helped and not ostracised from society.

13. Treatment

There have been anecdotal reports about the success of various forms of treatment, and there will be an increasing need for carefully controlled clinical trials as new treatments become available. Collaboration between paediatricians looking after HIV infected infants will be essential for sufficient numbers of infected infants to be recruited into multicentre trials.

14. Fostering and adoption

Where possible, natural parents should be encouraged to look after their infant. However, the lifestyle of some parents who continue to abuse drugs means that alternative care may be necessary. Also, parents with HIV infection may be clinically ill themselves and unable to provide care for their infants/children.

At the present time there is no justification for routine screening of all children prior to fostering or adoption[24]. The screening of infants born to mothers at high risk, prior to adoption or foster care placement raises unique problems. The rationale for HIV testing is to give potential parents the information required to make decisions about the child's medical care and to consider the possible social and psychological effects on their families[25]. However, antibody testing in the first year of life will not conclusively determine whether the child is infected.

There is an inherent conflict between the stigmatisation of children born to high risk women and the interests of adoptive parents who are faced with potential medical complications should AIDS develop, the stigmatisation of the family who have an HIV positive child, and the unfounded fear of transmission of infection to their family members. Further studies are required to clarify these issues and it is hoped that the rapid advances in virological techniques will make it possible to establish sooner whether the infant born to a high risk mother is infected with HIV.

generally considered that this would not be cost-effective or feasible at the present time, nor would it be ethical. It was agreed that screening in pregnancy should be voluntary and that it should be done for the parents' sake and not to protect the staff from the theoretical risk of infection. Screening should only be carried out if adequate counselling facilities are available, the termination of pregnancy can be offered, and the cost implications have been considered.

5. More information is required about the natural history of HIV infection in infants, the risk of an infant born to a seropositive mother being infected and the routes of transmission from mother to child. This requires well-designed prospective collaborative studies. These studies would also provide information about laboratory and clinical predictors of HIV infection and AIDS.

6. Children born to HIV positive mothers require regular paediatric follow-up with social support and counselling for the families. This is important for early diagnosis of infection and detection of the disease, and for advice on issues such as immunizations. It was considered important that a designated person be responsible for follow-up of the family.

When new treatments become available, these will need to be carefully evaluated in well-controlled multi-centre studies.

7. In order to avoid infected children being ostracised from day-centres or schools due to ignorance and lack of information about the way in which infection is transmitted, health professionals need to inform education boards and parents about the lack of risk of infection.

8. Laboratory tests are improving with better specificity and sensitivity. New tests are becoming available and require evaluation.

9. Studies are required to evaluate health education, i.e. its impact on knowledge, attitudes and behaviour with respect to sexually transmitted HIV infection.

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Table 1

Paediatric AIDS Surveillance in Europe[1]
(Up to 30.6.87)

Risk Group	Geographic Origin		Total	(%)	
	Europe	Outside Europe *			
Haemophilia	33		33	(18)	
Transfusion recipients	20	3	23	(13)	
Mother with AIDS or at increased risk:					
- IV drug abusers	60	1	60	(33)	)
- Transfusion recipient	4	1	5	(3)	)
- Heterosexual contact	14	22	36	(20)	) 64%
- Other/unknown	1	13	14	(8)	)
Unknown	8	3	11	(6)	)
Total	140	42	182	(100)	

* Africa - 26, Caribbean - 12, other - 4.

(1) Reference

Table 2

Paediatric AIDS by Country of Diagnosis
(30.6.87)

	Number
France	47
Italy	42
Federal Republic of Germany	22
Spain	21
United Kingdom	14
Belgium	11
Switzerland	6
The Netherlands	4
Austria	4
Ireland	3
Sweden	2
Denmark	2
Israel	1
Malta	1
Portugal	1
Yugoslavia	1
Total	182

Table 3

Aids Surveillance in Europe
(Up to 30.6.87)

Females: Age	Number
15-19	11
20-29	367
30-39	164
40-49	49
50-59	33
Over 60	29
Not known	1
Total	654

Table 4

Reported cases of AIDS in USA
(Up to 12.8.86 - CDC)

	Adult females Number	Paediatrics (< 13 years of age) Number
Before 12.8.82	51	1
" 12.8.83	140	41
" 12.8.84	258	50
" 12.8.85	531	124
" 12.8.86	890	178
Total	1870	394

Adapted from MMWR, 35, no. 49: (1986)

Table 5

Paediatric Aids - Risk Group
United States (CDC - 23 March 1987)

	Number	%
Transfusion	57	12
Haemophilia	24	5
Perinatal transmission	368	80
Undetermined	13	3
Total	462	100

Table 6

Paediatric Aids - Perinatal Transmission
United States (CDC - 23 March 1987)

	Number	% of All Paediatric AIDS
Mother drug user	207	44.8
Heterosexual transmission	144*	31.2
Parent with AIDS or other risk factor	17	3.6
Total	368	79.6

* 19 from Africa/Haiti

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